



12F8

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TWIN DIODE—REMOTE-CUTOFF PENTODE

9-PIN MINIATURE TYPE

*For use in automobile radio receivers operating directly
from 12-volt storage batteries***GENERAL DATA****Electrical:**Heater[•], for Unipotential Cathode:

Voltage range. . . . 10.0 to 15.9 dc volts

This voltage range is on an absolute basis. For longest life, it is recommended that the heater be operated within the voltage range of 11 to 14 volts.

Current (Approx.)

at 12.6 volts. . . . 0.15 amp

Direct Interelectrode Capacitances (Approx.):^oGrid No.1 to plate 0.06 μ fGrid No.1 to cathode, grid No.3,
grid No.2, and heater. 4.5 μ fPlate to cathode, grid No.3,
grid No.2, and heater. 3 μ fPlate of diode unit No.1 to plate
of diode unit No.2 0.3 μ f**Mechanical:**

Operating Position Any

Maximum Overall Length 2-3/16"

Maximum Seated Length. 1-15/16"

Length, Base Seat to Bulb Top (Excluding tip). 1-9/16" $\pm$ 3/32"

Maximum Diameter 7/8"

Dimensional Outline. See General Section

Bulb T6-1/2

Base Small-Button Noval 9-Pin (JETEC No.E9-1)

Basing Designation for BOTTOM VIEW 9F8

Pin 1—Plate of
Diode
Unit No.2Pin 2—Pentode
Grid No.2

Pin 3—Pentode Plate

Pin 4—Heater

Pin 5—Heater

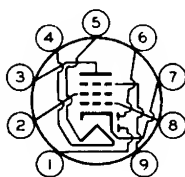
Pin 6—Plate of
Diode
Unit No.1Pin 7—Cathode of
Pentode Unit
and Diode
Units
No.1 and 2Pin 8—Pentode
Grid No.1Pin 9—Pentode
Grid No.3**PENTODE UNIT — AMPLIFIER — Class A₁****Maximum Ratings, Design Center Values:**

PLATE VOLTAGE. 30 max. volts

GRID-No.2 (SCREEN-GRID) VOLTAGE. 30 max. volts

GRID-No.1 (CONTROL-GRID) VOLTAGE:

Positive bias value. 0 max. volts

^{•, o}: See next page.

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PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode.	30 max.	volts
Heater positive with respect to cathode.	30 max.	volts

Characteristics with 12.6 Volts on Heater:

Plate Voltage.	12.6	volts
Grid-No.3 (Suppressor-Grid) Voltage. . . .	0	volts
Grid No.2 Voltage.	12.6	volts
Grid-No.1 Voltage.	0	volts
Plate Resistance (Approx.)	0.33	megohm
Transconductance	1000	μ mhos
Plate Current.	1	ma
Grid-No.2 Current.	0.38	ma
Grid-No.1 Voltage (Approx.) for trans- conductance of 10 μ mhos.	-5	volts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance	10 max.	megohms
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DIODE UNITS — Two

Maximum Ratings, Design-Center Values:

Values are for Each Unit

PLATE CURRENT.	1 max.	ma
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	30 max.	volts
Heater positive with respect to cathode.	30 max.	volts

Characteristics with 12.6 Volts on Heater:

Plate Current for plate volts = 10	2	ma
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- Operation of heater in series with other heaters is not recommended.
- Without external shield.

OPERATING CONSIDERATIONS

The *maximum ratings* in the tabulated data for the 12F8 are working design-center maximums established according to the standard design-center system of rating electron tubes. Tubes so rated will give satisfactory performance in storage-battery-operated equipment provided the following stipulations are observed:

In the case of storage-battery-with-charger supply or similar supplies, the normal battery-voltage fluctuation may be as much as 35 per cent or more. This fluctuation imposes severe operating conditions on tubes. Under these conditions, the equipment should be designed so that 90 per cent of the design-center maximum value of plate voltage and grid-No.2 voltage is never exceeded for a battery-terminal potential of 13.2 volts. Although the operating voltages of the 12F8 in this service will, at times, exceed the design-center maximum values, satisfactory performance with probable sacrifice in life will be obtained.